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COMMUNICATIONS.

THE PSYCHOLOGY OF THE DIAGRAM

THE gist of Professor Barbour's contribution (in the April number of the *SCHOOL REVIEW*) to the discussion of the psychology of the diagram seems to be the time-honored objection of the pedagogue to every innovation in education—"it cannot be adjusted to fit our methods." Doubtless it is true that the psychological genesis of the sentence will not avail to teach the subject of grammar as that subject is today commonly understood—that is, accounting it to be the science of crystallized or fossilized thought-structure, the anatomy, not the physiology, of sentential expression. If that is the grammar we want to teach now, as we have done in the past, let be. The straight-line Reed and Kellogg diagram will adequately serve us.

But those who still insist upon this diagram, and thus upon the outworn conception of grammar which it implies, seem not to realize that they are fighting the flood of irresistible progress in education. The all but universal disfavor into which the subject of grammar has fallen, not alone in the higher circles of pedagogical thought, but among the practical and progressive teachers of our primary and secondary schools, bears witness to the fact that this subject is going the way of botany and zoölogy, of psychology and logic, whose conversion from formal to biological sciences is a matter of comparatively recent history. The advocates of the straight-line diagram are playing today the rôle of objectors fifty years ago to the study of plant physiology. "How does the embryology, the physiological development, of the plant structure, help us to classify a buttercup in the genus *ranunculaceæ*?" they inquired scornfully. But we have found that there are things more vital in the science of botany than the Linnæan classification. It is now somewhat late in the day for protest against the dominant tendency in education to view all structures from the standpoint of growth, of evolution. This tendency has been unsuccessfully resisted in science and in philosophy. Can we hope that even the stern encasements of grammar will be able to prevail against it?

It is true that the new psychology of the sentence has not yet been digested into a detailed method of teaching grammar. But patience. No genuine "system" of teaching any subject springs full-grown into birth, but forms itself slowly out of a new point of view, such as in grammar the later theory of sentence-structure affords. And certainly the suggestion that the organic constitution of the sentence be represented by the growing diagram, such as that of the tree, the amoeba, or the solar system, rather than by the static diagram of crossing straight lines, is nothing unless it be a practical suggestion looking toward the pedagogy of the new grammar. The whole point of the paper read at the English conference in Ann Arbor, and later published in the *Educational Review*, was the recommendation that a diagram be used in teaching grammar, which represents truly the biological development of the sentence-thought. This the tree diagram does. This the straight-line diagram does not. And, since it is complained that certain "advantages" accruing from the use of the straight-line diagram have been ignored, let it be said that both these advantages (those of representing sentence-structure to the eye of the pupil and of serving as a stenographic device for the teacher) are secured equally well by the use of the biological diagram; and, furthermore, if this were not so, no conceivable advantages could neutralize the tremendous disadvantage of untruthfulness. If the straight-line diagram is not true to the structure of the sentence, its supporters have no arguments for it strong enough to overbear that fact. The whole matter lies here. There is only one question to settle, and that is the question, "Does the straight-line diagram truthfully represent the actual structure of the sentence?" And for the answer to this question we have no appeal but to modern psychology, which at once and emphatically negatives Professor Barbour's statement that "the straight-line diagram does in a general way fairly represent the grammatical structure of the English sentence." The straight-line diagram unqualifiedly *misrepresents* that structure, as it is understood by the accredited psychology of the present day; and in the face of this fact all minor contentions fade into the background.

Allow me to correct a misapprehension on the part of Professor Barbour. The genesis of the sentence is not of historical interest alone, or even chiefly, since such genesis takes place in the mind of every child who utters a sentence. It is the development in the speaker's mind of the inchoate thought into clearly differentiate utter-

ance that concerns us. I should not care to affirm that the interjection was historically the earliest form of speech, though from psychological considerations I might be inclined to that view. That puzzle has, I believe, been relinquished by philologists, and I am not so rash as to attempt its solution offhand. What I do assert is only that the interjection represents adequately the first vague stage of a thought in the mind of the person who afterwards utters from it a somewhat primitive sentence. From interjection to developed sentence is the progress of a single thought in a single human brain. Beyond that we need not for our purposes go.

Professor Barbour rightly says: "If we teach grammar pedagogically we shall make the sentence our point of departure." I would not only indorse this statement, but go a step further still, and say that the sentence must be our point of departure and also of return. It is at once the starting point and goal. It is, rightly understood, the whole subject of grammar. And it is for this reason that I must again urge the fundamental necessity of regarding the sentence from the psychological point of view, not as the mathematical formula, "subject + predicate = sentence," but as a living and growing organism, which has developed from a simple to a complexer unity. Let us have done, as speedily as may be, with the mechanical *e pluribus unum* conception of the sentence, and read the development of expression as we have come to read that of life and of thought, in terms of biological growth.

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